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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,390	10/13/2006	Laurent Labrousse	285948US0PCT	1129
22850	7590	01/21/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			XU, LING X	
			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			01/21/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/568,390	<b>Applicant(s)</b> LABROUSSE ET AL.	
	<b>Examiner</b> Ling Xu	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/7/2006 and 6/12/2006</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the followings:

In the Comparative Example 3a on page 15 of the specification, it states that the zirconium barrier layers were replaced with nickel-chromium layers. However, there is only one zirconium layer (not zirconium layers) replaced with the nickel-chromium layer (page 15 of the specification, lines 6-8). It is unclear if applicants' intend is to have only one of the Zr layers or more than one of the Zr layers replaced with nickel-chromium layer(s).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4-16, and 20-21 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling.

It is noted that claims 1, 4-16, and 20-21 recite a substrate comprising the same layered structure as described in Comparative Examples 1-2 and 1a-3a of the present application (pages 9-15 of the specification), which includes a layered structures having a ZnO-based layer in contact with a functional layer. Claims 2-3 and 18-19 recite a substrate comprising the same layered structure as described in Examples 1-3, which

Art Unit: 1794

includes a layered structure having an Ag/Zr/ZnO structure. It appears that the layered structures shown in the Examples 1-3 with the Ag/Zr/ZnO structure represent applicants' invention. The Examples 1-3 shows that the Ag/Zr/ZnO structure produces much better (or unexpected) results than the layered structure shown in the Comparative Examples 1-2 and 1a-3a (see the comparison results in the Examples 1-3 and the Comparative Examples 1-2 and 1a-3a). The Ag/Zr/ZnO structure appears to be critical or essential to the practice of the present invention. Accordingly, the Ag/Zr/ZnO structure not included in claims 1, 4-16, and 20-21 is considered not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 and 18-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the location of the upper ZnO-based dielectric layer is confusing. The term "upper" is a relative term. It is unclear if this upper dielectric layer is above the functional layer or below the functional layer. It is also unclear if this upper dielectric layer is above the barrier layer or below the barrier layer.

In claim 2, it is unclear if the term "surmounted" is referred to that the ZnO-based dielectric layer is on the Zr-based upper barrier layer but not cover the entire Zr-based upper barrier layer completely.

Art Unit: 1794

In claim 3, there is insufficient antecedent basis for the limitation "the silver" (line 2) in the claim.

In claim 4, it is unclear if the "a ZnO-based upper dielectric layer" is the same as the upper dielectric layer recited in claim 1.

In claim 6, it is unclear if the "a barrier layer" is the same barrier layer as recited in claim 1.

In claim 8, it is unclear if the "said dielectric layer" is the same as the upper dielectric layer recited in claim 1.

In claim 15, it is unclear what the "at least one substrate according to the invention" is referred to. There is insufficient antecedent basis for the limitation "the invention" in the claim. It is also unclear if "the assembly" is referred to the glazing.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 1794

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-11, 13-16, and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coustet et al. (WO-2002/048065, its US equivalent, US 2005/0123772, is used as English translation) in view of Chesworth et al. (US 4, 749,397).

Regarding claims 1-4 and 11, Coustet discloses a coated article comprising at least one transparent glass substrate provided with a stack of thin layers having an alternation of  $n$  functional layers and of  $n+1$  coatings composed of one or more layers made of a dielectric, so that each functional layer is placed between two coatings. Furthermore, at least one layer absorbent is inserted between two layers of dielectric of at least one of the said coatings. The absorbent layers may be NiCr nitride (NiCrN) or chromium nitride (CrN) layers (translation page 1, [0017]). The layers comprising dielectric layers may be silicon nitride layers (page 2, [0019]-[0020]).

Coustet also discloses that at least one of the coatings of the stack comprises at least one layer of zinc oxide (translation page 2, [0023]). The zinc oxide layer may be beneath at least one of the functional layers (page 2, [0024]) or above the at least one of the functional layers (page 2, [0025]).

Coustet further discloses (page 2, [0027]) that a thin layer of metal may be inserted between each functional layer and the coating placed above it and/or the coating placed beneath it. They are usually referred to as tie layers (in the case of the

Art Unit: 1794

layer underneath) or sacrificial or blocking layers (in the case of the layer on top). The metal layer may be a titanium metal.

Coustet does not disclose that the metal layer is a zirconium metal layer.

Chesworth teaches a toughened silver coated glass having high light transmission and useful for architectural glazing and as vehicle windows is produced by depositing layers of metal over, or both under and over, the silver layer. The metal may be selected from aluminum, titanium, zinc, tantalum and zirconium (abstract and col. 1, lines 1-10 and col. 2, lines 1-10). Accordingly, Chesworth suggests that zirconium and titanium provides the same equivalent function for the silver functional layer.

Therefore, it would have been obvious to one skilled in the art at the time of invention to substitute the known zirconium with another known metal titanium (since Chesworth teaches that zirconium is a functional equivalent metal to the titanium) as the metal layer over and/or under the silver functional layer in order to provide the coated article with high light transmission, and results would have been reasonably predictable, *KSR International Co. v. Teleflex Inc.* Substitution of one known element for another to yield predictable results would be obvious to one skilled in the art.

Regarding claim 5, Coustet discloses a silicon nitride layer on the top of the coating stack (page 3, [0043]). The silicon nitride layer can be considered functionally equivalent to the claimed upper protection layer.

Regarding claims 6-8, Coustet discloses that the thickness of metal layer is less than 6nm, the thickness of the functional layer is 9.5-17.5 nm, and the thickness of the zinc oxide layer is 10 nm (translation page 3, [0043]).

Regarding claims 9 and 18-21, since Coustet disclose the coated article comprising the same layered structure, the same layered structure would also have the same properties such as retaining its properties even after a heat treatment at a temperature of at least 500°C.

Regarding claim 13, Coustet discloses a lower dielectric layer structure of  $\text{Si}_3\text{N}_4/\text{ZnO}$  (page 2, [0029]).

Regarding claims 14-16, Coustet discloses a double glazing, which may comprise a film between the two substrates (page 2, [0030]) and has a light transmission within the claimed range and a selectivity of about 1.8-1.9 (page 4, [0065]), which is within the claimed range.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling Xu whose telephone number is 571-272-7414. The examiner can normally be reached on 8:00 am- 4:30 pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Lx  
January 13, 2009